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Clean Version of Pending Claims

**SEQUENCE AND METHOD FOR INCREASING PROTEIN EXPRESSION IN CELLULAR
EXPRESSION SYSTEMS**

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3. (Amended) A polynucleotide comprising a sequence encoding a functional vesicular fusion factor 2 protein (Vff2p), wherein the Vff2p has greater than 36% sequence identity with SEQ ID NO:2, and wherein the Vff2p increases yeast cell growth or protein secretion.
 4. (Amended) The polynucleotide of claim 3, comprising SEQ ID NO:1 or a sequence encoding SEQ ID NO:2.
 5. The polynucleotide of claim 3, wherein the protein is about 32 kD.
 6. The polynucleotide of claim 3, further comprising a promoter operatively linked to the sequence encoding the Vff2p.
 7. The polynucleotide of claim 6 wherein the promoter is a promoter that functions in a host cell to direct transcription of the sequence encoding the Vff2p.
 8. The polynucleotide of claim 3, further comprising a sequence encoding a heterologous target protein.
 9. The polynucleotide of claim 8, further comprising a second promoter operably linked to the sequence encoding the target protein.

10. The polynucleotide of claim 9, wherein the second promoter is a promoter that functions in the host cell to direct transcription of the target protein.

11. The polynucleotide of claim 7, wherein the host cell is a yeast cell.

C.2 12. (Amended) The polynucleotide of claim 3, wherein the yeast cell is a *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*, *Yarrowia lipolytica*, *Pichia pastoris*, *Hansenula polymorpha*, or *Kluyveromyces lactis*.

C.3 14. (Amended) A polynucleotide expression vector comprising a polynucleotide encoding a functional Vff2p, wherein the Vff2p has greater than 36% sequence identity with SEQ ID NO:2, and wherein the Vff2p increases yeast cell growth or protein secretion.

15. (Amended) The expression vector of claim 14, comprising SEQ ID NO:1, or a sequence encoding SEQ ID NO:2.

16. The expression vector of claim 14, wherein the protein is about 32 kD.

17. The expression vector of claim 14, further comprising a promoter sequence operatively linked to the sequence encoding the Vff2p.

18. The expression vector of claim 17 wherein the promoter is a promoter that functions in a host cell to direct transcription of the sequence encoding the Vff2p.

19. The expression vector of claim 14, further comprising a sequence encoding a heterologous target protein.

20. The expression vector of claim 19, wherein transcription of the target protein is directed by a second promoter.
21. The expression vector of claim 20, wherein the second promoter is a promoter that functions in the host cell to direct transcription of the target protein.
22. The expression vector of claim 18, wherein the host cell is a yeast cell.
23. The expression vector of claim 22, wherein the yeast is *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*, *Yarrowia lipolytica*, *Pichia pastoris*, *Hansenula polymorpha*, or *Kluyveromyces lactis*.
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25. (Amended) A recombinant host cell comprising a yeast cell genetically altered to express a protein encoded by a polynucleotide sequence encoding a functional Vff2p, wherein the Vff2p has greater than 36% sequence identity with SEQ ID NO:2, and wherein the Vff2p increases yeast cell growth or protein secretion.
26. (Amended) The host cell of claim 25, comprising SEQ ID NO:1, or a sequence encoding SEQ ID NO:2.
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27. The host cell of claim 25, further comprising a sequence encoding a heterologous target protein.
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29. (Amended) The host cell of claim 25, wherein the yeast cell is a *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*, *Yarrowia lipolytica*, *Pichia pastoris*, *Hansenula polymorpha*, or *Kluyveromyces lactis* cell:

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30. (Amended) The host cell of claim 25, wherein the host cell lacks a functional protein involved in the secretory pathway and/or involved in the required cellular machinery for membrane fusion, other than Vff2p.
31. (Amended) A method for increasing cell growth of a yeast host cell, comprising introducing Vff2p into the cell and culturing the cell, wherein the Vff2p has greater than 36% sequence identity to SEQ ID NO:2.
32. (Amended) The method for increasing cell growth of a cell according to claim 31, wherein the host cell is cultured under conditions effective to allow expression of the Vff2p.
33. (Amended) A method for increasing protein secretion from a yeast host cell, comprising introducing Vff2p into the cell and culturing the cell, wherein the Vff2p has greater than 36% sequence identity to SEQ ID NO:2.
34. (Amended) The method for increasing protein secretion from a cell according to claim 33, wherein the host cell is cultured under conditions effective to allow expression of the Vff2p.
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36. (Amended) An isolated functional vesicular fusion factor 2 protein comprising SEQ ID NO:2, or a Vff2p with greater than 36% sequence identity to SEQ ID NO:2, and wherein the Vff2p increases yeast cell growth or protein secretion.

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37. (Amended) A method of selecting for a yeast secretory mutant cell containing a polynucleotide sequence encoding a Vff2p operably linked to a promoter, wherein the Vff2p comprises SEQ ID NO:2, or a Vff2p with greater than 36% identity to SEQ ID NO:2, the method comprising growing the yeast secretory mutant cell at a restrictive temperature of about 32-37°C, wherein the restrictive temperature selectively favors mutant cell growth.

38. The method of claim 37, wherein the temperature is at about 37°C.

39. The method of claim 37, wherein the secretory mutant cell is sec17-1, sec18-1, bet1-1, sec22-2, us01-1, pex3-1, sed5-1, cdc48-2, sec7-5, or ypt1-3.28.

40. The method of claim 39, wherein the secretory mutant cell is sec17-1, sec18-1, bet1-1, sec22-2, us01-1, or pex3-1.

41. The method of claim 40, wherein the secretory mutant cell is sec18-1.

42. The method of claim 37, wherein the polynucleotide further comprises a sequence encoding a heterologous target protein operably linked to a second promoter.

43. The polynucleotide of claim 3, wherein the Vff2p comprises SEQ ID NO:2.

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44. (Amended) The protein of claim 36, wherein the yeast is *S. cerevisiae*.

45. The protein of claim 36, wherein the protein is from *S. cerevisiae*.

46. The method of claim 37, wherein the yeast cell is a *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*, *Yarrowia lipolytica*, *Pichia pastoris*, *Hansenula polymorpha*, or *Kluyveromyces lactis* cell.